

Remarks and Arguments

Claims 10, 12, 20-22, and 33-34 are pending. Claim 10 is the sole independent claim.

Applicant notes with appreciation the withdrawal of the prior obviousness rejection.

The Examiner now rejects prior claims 10, 12, 20-21 and 34 as anticipated by Jones U.S. Patent 6,198,220; claims 11 and 33 as obvious over Jones; and claim 22 as obvious over Jones in view of Hung U.S. Patent No. 5,776,622.

Applicant has amended the sole independent claim 10 to include the subject matter of prior claim 11. As a result, the outstanding rejections are obviousness over Jones alone, and rejection of dependent claim 22 as obvious over Jones in combination with Hung.

The present inventors have found that a layer of SiO functions both as a physical barrier and a gettering layer, for example as described at page 7, lines 7-9 of the original specification. The inventors further found that this works particularly well in combination with a layer of AlN, Al₂O₃, SiO₂, or Si₃N₄ to protect the underlying elements of the device. No such combination is suggested by Jones. On the contrary, Jones teaches away from the invention of new claim 10 for the following reasons.

While Jones refers to SiO as one example of a material for the "dielectric film 150," the overlying film 175 is described throughout as "a metal film." Jones describes the function of this "metal film" as reacting with moisture and oxygen to absorb gases or to seal off pin holes or other defects in the film by volume expansion as metal oxide forms in the presence of moisture and/or oxygen. See Jones at column 5, line 66 to

column 6, line 2, and column 6, lines 25-28. In contrast, to have used Applicant's claimed "inert barrier layer" for Jones' "metal film 175" would have gone against this teaching of Jones to use a reactive metal film. Thus, the subject matter of claim 10 would not have been obvious from Jones. Amended claim 10 is further distinguished over Jones by the recitation of specific inert barrier materials for the inert barrier layer.

The Examiner has suggested that Jones discloses the use of a layer of TiN for the metal film 175. This is not correct. Jones discloses at column 5, line 54 the use of a layer of "Ti/TiN" for the metal film 175; Jones does not disclose the use of "TiN" for the metal film 175. At the same section of Jones, there is reference to "Sc;Sc₂O₃." This includes a readily apparent typographical error, i.e., the skilled person would have interpreted "Sc;Sc₂O₃" to mean "Sc/Sc₂O₃" in view of the immediate prior reference to "Ti/TiN," and in view of the repeated description of film 175 as a "metal film" and the functioning of the metal film to react with moisture and oxygen. Thus, there is no suggestion to use a layer of any one of the inert barrier materials described in Applicant's amended claim 10 for the "metal film 175" of Jones.

The secondary reference Hung, cited against claim 22, fails to cure the deficiencies of Jones. Hung was cited merely with regard to certain layer thicknesses of the conductive layers recited in dependent claim 22.

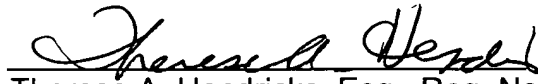
Thus, Applicant respectfully requests withdrawal of the obviousness rejections based on Jones alone, or in combination with Hung.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Respectfully submitted,

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